Subregional RTEP Committee – Mid-Atlantic
FirstEnergy Supplemental Projects

April 18, 2024

Solutions

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

Met-Ed Transmission Zone M-3 Process
Violet Hill No. 6 115-69 kV Transformer

Need Number: ME-2024-003

Process Stage: Solution Meeting – 04/18/2024

Previously Presented: Need Meeting – 02/15/2024

Project Driver:

Operational Flexibility and Efficiency

Equipment Material Condition, Performance, and Risk

Specific Assumption Reference:

System Performance Projects

- Add/Replace Transformers
- Upgrade relay schemes

End of Life Criteria

- Transformers at or beyond expected service life
- Outdated or obsolete technology and equipment

Problem Statement:

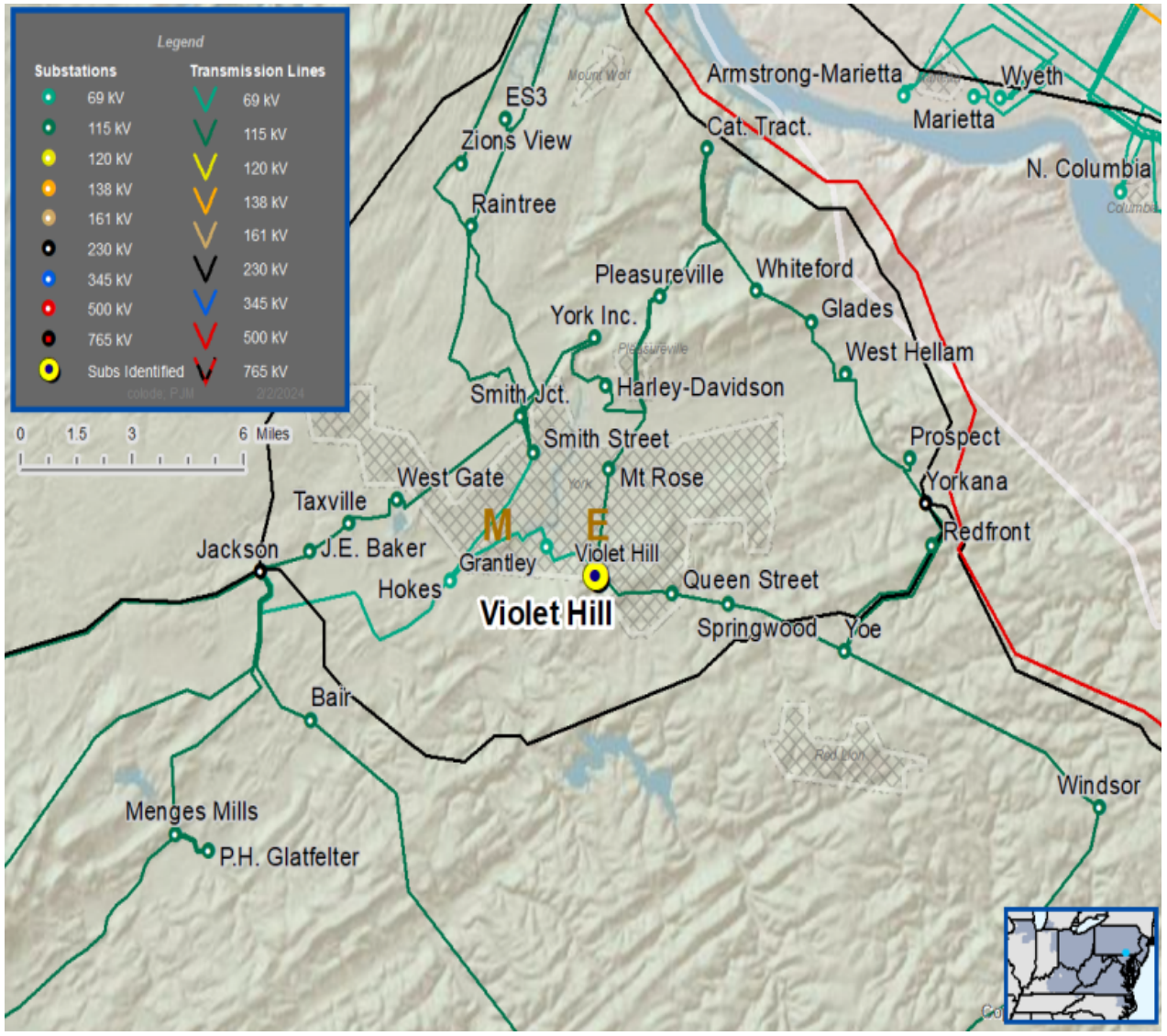
The existing No. 6 115-69 kV transformer at Violet Hill Substation is 66 years old and is approaching end of life. The transformer is experiencing increased corrective maintenance costs. Maintenance history demonstrates that the transformer has oil leaks and paper degradation.

The Violet Hill 69 kV breaker '6B32' and the electromechanical relaying is 55 years old. The relaying equipment has a history of misoperation and is approaching end of life.

The transformer is limited by terminal equipment.

Existing Ratings

84/111 MVA SN/SSTE 109/125 MVA WN/WSTE



Met-Ed Transmission Zone M-3 Process
Violet Hill No. 6 115-69 kV Transformer

Need Number: ME-2024-003
Process Stage: Solution Meeting – 4/18/2024

Proposed Solution:

- At Violet Hill Substation:
  - Replace the No. 6 115-69 kV 75 MVA Transformer with a 125 MVA Transformer
  - Replace 69 kV circuit breaker and associate disconnect switches
  - Replace strain bus conductor and transformer relaying

Violet Hill No. 6 115-69 kV Transformer Ratings:

- Before Proposed Solution: 84 / 111 / 109 / 125 MVA (SN/SSTE/WN/WSTE)
- After Proposed Solution: 116 / 125 / 125 / 133 MVA (SN/SSTE/WN/WSTE)

Alternatives Considered:

- Maintain transformer in existing condition with elevated risk of failure.

Estimated Project Cost: $6.10M
Projected In-Service: 5/1/2028
Status: Conceptual
Model: 2023 RTEP model for 2028 Summer (50/50)

115-69 kV
XFMR #6

Legend	
500 kV	
345 kV	
230 kV	
138 kV	
115 kV	
69 kV	
46 kV	
34.5 kV	
23 kV	
New	


Planning
Community

Appendix

High level M-3 Meeting Schedule

Assumptions

Activity	Timing
Posting of TO Assumptions Meeting information	20 days before Assumptions Meeting
Stakeholder comments	10 days after Assumptions Meeting

Needs

Activity	Timing
TOs and Stakeholders Post Needs Meeting slides	10 days before Needs Meeting
Stakeholder comments	10 days after Needs Meeting

Solutions

Activity	Timing
TOs and Stakeholders Post Solutions Meeting slides	10 days before Solutions Meeting
Stakeholder comments	10 days after Solutions Meeting

Submission of Supplemental Projects & Local Plan

Activity	Timing
Do No Harm (DNH) analysis for selected solution	Prior to posting selected solution
Post selected solution(s)	Following completion of DNH analysis
Stakeholder comments	10 days prior to Local Plan Submission for integration into RTEP
Local Plan submitted to PJM for integration into RTEP	Following review and consideration of comments received after posting of selected solutions

Revision History

4/8/2024 – V1 – Original version posted to pjm.com